

SITE-SPECIFIC PROJECT MITIGATION

Site Name: Petaluma River Complex, Sonoma County

TSN: ISP-2007-24

<i>Impact*</i>	<i>Applicable Mitigation & Conservation Measures*</i>	<i>Applicable Sub-area</i>	<i>Backpack</i>	<i>Boat</i>	<i>Truck</i>	<i>Amphibious Vehicle</i>	<i>Implementation Timing</i>	<i>Verification Signatures</i>	
								<i>Implementing Entity</i>	<i>ISP Field Supervisor</i>
WQ-1: Degradation of water quality due to herbicide application	Apply herbicide directly to plant at low tide and according to label. (WQ-1; CM-3, 4)	All sub-areas	X	X	X	X	During treatment		
WQ-2: Degradation of water quality due to herbicide spills	Apply under supervision of trained applicator (WQ-2; CM-3)	All sub-Areas	X	X	X	X	During treatment		
	Implement spill and containment plan provided or approved by ISP (WQ-2; CM-3, 17)	All sub-areas	X	X	X	X	During treatment		
WQ-3: Degradation of Water Quality due to Fuel or Petroleum Spills	Implement spill and containment plan provided or approved by ISP (WQ-3; CM-17)	All sub-areas	X	X	X	X	During treatment		
BIO-1.2: Effects on tidal marsh plant communities affected by Atlantic smooth cordgrass and its hybrids.	Minimize entry and re-entry into marsh, define access points (BIO-1.2; CM-1)	All Sub-areas	X	X	X	X	During treatment		
	Avoid staging in high, dense vegetation such as gumplant or pickleweed (FWS GL)	All sub-areas	X	X	X	X	During treatment		
	Avoid herbicide application to non-target vegetation adjacent to treatment area (BIO-1.2; CM-3, 4)	All sub-areas	X	X	X	X	During treatment		

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Mitigations are from corresponding numbered mitigation in the same document,
CM - Conservation Measures as defined by USFWS Biological Opinions (general and site-specific)

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BIO-3: Effects on shore-birds, waterfowl & marshland birds.	Avoid working within 1,000 feet of occupied mudflats during peak Pacific Flyway stopovers (BIO-3)	All sub-areas	X	X	X	X	During treatment		
	Occupy treatment area soon after high tide, before mudflats emerge (BIO-3)	All sub-areas	X	X	X	X	During treatment		
	Haze shorebirds to minimize potential direct contact with herbicide drift (BIO-3)	All sub-areas	X	X	X	X	During treatment		
BIO-4.1: Effects on the salt marsh harvest mouse and tidal marsh shrew species.	Use shortest possible access route through any pickleweed habitat. Flag areas of repeated access (BIO-4.1; CM-15)	All sub-areas	X	X	X	X	During treatment		
	Use protective mats or other covering over pickleweed in areas or repeated access (BIO-4.1; CM-15)	All sub-areas	X	X	X	X	During treatment		
	Assume presence of SMHM on all suitable sites (CM 14)	All sub-areas	X	X	X	X	During treatment		
	Whenever possible, schedule work after mass mortality events caused by extreme high tides (CM 16).	All sub-areas	X	X	X	X	Pre- and during treatment		
BIO-5.1: Effects on California clapper rail.	Perform work only during Sept 1 thru Feb 1 to avoid CLRA breeding season (BIO-5.1; CM-18)	All sub-areas	X	X	X	X	During treatment		

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	For work within the Clapper Rail breeding season, call counts will be performed in the early spring according to FWS protocols (CM-18)	All sub-areas					Pre-treatment		
	Provide CLRA Field biologist supervision (BIO-5.1)	All sub-areas	X	X	X	X	During treatment		
	Assure that field personnel are trained in general CLRA biology and CLRA identification and call detection (BIO-5.1)	All sub-areas	X	X	X	X	Pre-treatment and during treatment		
	Report any CLRA activity immediately to ISP Field Supervisor and in post-treatment report (BIO-5.1)	All sub-areas	X	X	X	X	During and post-treatment		
BIO-5.2: Effects on California Black Rail	Conform with BIO-5.1	All sub-areas	X	X	X	X	Pre-, during, and post-treatment		
BIO-5.3: Effects on tidal marsh song sparrow subspecies and the salt marsh common yellow-throat.	Report any SMSS and SCYE activity immediately to ISP Field Supervisor and in post-treatment report (BIO-5.3)	All sub-areas	X	X	X	X	During and post-treatment		
	Avoid spraying or removing <i>Grindelia</i> plants in the marsh (BIO-5.3)	All sub-areas	X	X	X	X	During treatment		
	Watch for Song Sparrow presence in the work area during early season treatment work (pre-August), especially in the smaller, upper reaches of channels (BIO-5.3)	All sub-areas	X	X	X	X	During treatment		

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BIO-5.4: Effects on California least terns and western snowy plovers.	Survey access levees for nesting CALT and WSPL prior to entry (BIO-5.4; CM-20)	All sub-areas	X	X	X	X	Pre-treatment		
	Report any CALT and WSPL activity immediately to ISP Field Supervisor and in post-treatment report (BIO-5.4)	All sub-areas	X	X	X	X	During and post-treatment		
BIO-6.1: Effects on anadromous salmonids (winter-run and spring-run Chinook salmon, steelhead).	Minimize herbicide applications (BIO-6.1)	All sub-areas	X	X	X	X	During treatment		
	Avoid use of alkylphenol ethoxylate surfactants adjacent to channel to minimize any potential adverse affects on estuarine fish (BIO-6.1)	All sub-areas	X	X	X	X	During treatment		
BIO-6.4: Effects on estuarine fish populations of shallow submerged intertidal mudflats and channels.	Minimize spraying near channels (BIO-6.4)	All sub-areas	X	X	X	X	During treatment		
	Avoid use of alkylphenol ethoxylate surfactants adjacent to channel to minimize any potential adverse affects on estuarine fish (BIO-6.4)	All sub-areas	X	X	X	X	During treatment		
AQ-1: Dust emissions	Limit speeds on dirt roads to 15 miles per hour (AQ-1)	All sub-areas	X	X	X	X	During treatment		

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AQ-3: Herbicide effects on air quality.	Implement ISP approved drift management plan (AQ-3; CM-3, 4)	All sub-areas	X	X	X	X	During treatment		
N-1: Disturbance of Sensitive Receptors	Comply with all local noise ordinances (N-1)	Sub-Area 24a	X	X	X	X	During treatment		
HS-2: Worker Health Effects from Herbicide Application.	Follow handling and application procedures as identified on product label (HS-2; CM-3, 4)	All sub-areas	X	X	X	X	During treatment		
HS-3: Health Effects to the Public from Herbicide Application.	Minimize drift according to ISP drift management plan (HS-3; CM-3, 4)	All sub-areas	X	X	X	X	During treatment		
	Post appropriate signage (see attached signage requirements) a minimum of 24 hours pre-treatment (HS-3)	All sub-areas	X	X	X	X	Pre-treatment		
HS-4: Health effects to workers or the public from accidents associated with treatment.	Maintain ISP or approved equivalent Site Safety and Spill Prevention plan on site (HS-4; CM-3, 4,17)	All sub-areas	X	X	X	X	During treatment		
VIS-1: Alteration of Views from Removal of Non-native Cordgrass Infestations.	Post appropriate signage according to ISP signage protocols (VIS-1)	All sub-areas	X	X	X	X	Pre-treatment, during treatment, post-treatment		
CUL-1: Disturbance or Destruction of Cultural Resources from Access and Treatment.	Report all discovered pre-historic or historic resources to the ISP Field Supervisor and a qualified archeologist or historic resources consultant and suspend all work at site until archaeological mitigation has taken place (CUL-1)	All sub-areas				X	Pre-treatment and during treatment		

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Exhibit 4: Environmental Documentaion: Petaluma River Invasive Spartina Mitigation Matrix

MITIGATION CHECKLIST

Petaluma River Complex TSN: ISP-2007-24

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CM-7: Invasive Species	Monitor cleared patches for recruitment of invasive plant species including perennial pepperweed until native vegetation has become dominant (CM-7)	All sub-areas	X	X	X	X	Post-treatment		

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